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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,174	11/25/2003	Tom Walter Yourk		1173
39233	7590	05/14/2004		
TOM YOURK 107 PHYLLIS DR. SAVANNAH, GA 31419			EXAMINER CEGIELNIK, URSZULA M	
			ART UNIT 3712	PAPER NUMBER

DATE MAILED: 05/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/707,174	<b>Applicant(s)</b> YOURK, TOM WALTER	
	<b>Examiner</b> Urszula M Cegielnik	<b>Art Unit</b> 3712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

## DETAILED ACTION

1. This application is informal in the arrangement of the specification. The following guidelines illustrate the preferred layout and content for patent applications. These guidelines are suggested for the applicant's use.

### Arrangement of the Specification

The following order or arrangement is preferred in framing the specification and, except for the reference to "Microfiche Appendix" and the drawings, each of the lettered items should appear in upper case, without underlining or bold type, as section headings. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) Title of the Invention.
  - (b) Cross-References to Related Applications.
  - (c) Statement Regarding Federally Sponsored Research or Development.
  - (d) Reference to a "Microfiche Appendix" (see 37 CFR 1.96).
  - (e) Background of the Invention.
    - 1. Field of the Invention.
    - 2. Description of the Related Art including information disclosed under 37 CFR 1.97 and 1.98.
  - (f) Brief Summary of the Invention.
  - (g) Brief Description of the Several Views of the Drawing(s).
  - (h) Detailed Description of the Invention.
  - (i) Claim or Claims (commencing on a separate sheet).
  - (j) Abstract of the Disclosure (commencing on a separate sheet).
  - (k) Drawings.
  - (l) Sequence Listing (see 37 CFR 1.821-1.825).
2. Applicant is advised on how to arrange the content of the specification.

### Content of Specification

- (a) Title of the Invention: See 37 CFR 1.72(a). The title of the invention should be placed at the top of the first page of the specification. It should be brief but technically accurate and descriptive, preferably from two to seven words.
- (b) Cross-References to Related Applications: See 37 CFR 1.78 and MPEP § 201.11.
- (c) Statement Regarding Federally Sponsored Research and Development: See MPEP § 310.

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- (d) Reference to a "Microfiche Appendix": See 37CFR 1.96(c) and MPEP § 608.05. The total number of microfiche and the total number frames should be specified.
- (e) Background of the Invention: The specification should set forth the Background of the Invention in two parts:
  - (1) Field of the Invention: A statement of the field of art to which the invention pertains. This statement may include a paraphrasing of the applicable U.S. patent classification definitions of the subject matter of the claimed invention. This item may also be titled "Technical Field."
  - (2) Description of the Related Art: A description of the related art known to the applicant and including, if applicable, references to specific related art and problems involved in the prior art which are solved by the applicant's invention. This item may also be titled "Background Art."
- (f) Brief Summary of the Invention: A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.
- (g) Brief Description of the Several Views of the Drawing(s): A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.
- (h) Detailed Description of the Invention: A description of the preferred embodiment(s) of the invention as required in 37 CFR 1.71. The description should be as short and specific as is necessary to describe the invention adequately and accurately. This item may also be titled "Best Mode for Carrying Out the Invention." Where elements or groups of elements, compounds, and processes, which are conventional and generally widely known in the field of the invention described and their exact nature or type is not necessary

for an understanding and use of the invention by a person skilled in the art, they should not be described in detail. However, where particularly complicated subject matter is involved or where the elements, compounds, or processes may not be commonly or widely known in the field, the specification should refer to another patent or readily available publication which adequately describes the subject matter.

- (i) Claim or Claims: See 37 CFR 1.75 and MPEP § 608.01(m). The claim or claims must commence on separate sheet. (37 CFR 1.52(b)). Where a claim sets forth a plurality of elements or steps, each element or step of the claim should be separated by a line indentation. There may be plural indentations to further segregate subcombinations or related steps.
- (j) Abstract of the Disclosure: A brief narrative of the disclosure as a whole in a single paragraph of 250 words or less on a separate sheet following the claims.
- (k) Drawings: See 37 CFR 1.81, 1.83-1.85, and MPEP § 608.02.
- (l) Sequence Listing: See 37 CFR 1.821-1.825.

3. If applicant continues to prosecute the application, revision of the specification and claims to present the application in proper form is required.

While an application can be amended to make it clearly understandable, no subject matter can be added that was not disclosed in the application as originally filed.

4. Claims 1-3 are rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.

The claim(s) are narrative in form and replete with indefinite and functional or operational language. The structure which goes to make up the device must be clearly and positively specified. The structure must be organized and correlated in such a manner as to present a complete operative device. The

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claim(s) must be in one sentence form only. Note the format of the claims in the patent(s) cited.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fleischmann (US Patent No. 4,919,637) in view of Cicoff et al.

Fleischmann discloses a method of propelling a model submarine using a pump (45) and exacting buoyancy (col. 9, lines 37-53) to allow a completely functional model without any external moving parts (col. 10, lines 39-46); the method can be applied to model submarines varying in lengths (i.e. kits, col. 3, lines 40-43); the submarine includes ballast materials (col. 12, lines 30-47).

Fleischmann does not disclose the pump being a bilge pump.

Cicoff et al. teach using a pump in the form of a bilge pump (col. 6, lines 17-20).

It would have been obvious to one having ordinary skill in the art at the time the invention to provide the pump in the form of a bilge pump as taught by Cicoff et al., since such a modification would provide an alternate pump arrangement.

### ***Applicant's Response***

The following consists of general information for the Applicant's benefit. Unless the Office explicitly requests the return of a paper, all papers mailed to the Applicant are intended to be kept by the Applicant for his own records. The response must be signed by ALL applicants.

#### **I. Amendments to the Specification**

After March 1, 2001, all amendments to the specification, including the claims, must be made by replacement paragraph/section/claim in clean form (without underlining and bracketing) in order to eliminate (1) the need for the Office to enter changes to the text of application portions by handwriting in red ink, and (2) the presence of hard to scan brackets and underlining to improve the patent publishing process. This practice requires the applicant to provide a clean copy of an amended paragraph/section/claim together with a marked up version using applicant's choice of a marking system showing the changes being made which will aid the examiner. The marked up version must be based on the immediate previous version and indicate (by markings) how the previous version has been modified to produce the clean replacement paragraph(s), section(s), specification or claim(s) submitted in the current amendment. "Previous version" is defined as the version of record in the application as originally filed or from a previously entered amendment.

(1) Amendment by instruction to delete, replace, or add a paragraph. Amendments to the specification, other than the claims and listings provided for elsewhere, may be made by submitting:

(i) An instruction, which unambiguously identifies the location, to delete one or more paragraphs of the specification, replace a deleted paragraph with one or more replacement paragraphs, or add one or more paragraphs;

(ii) Any replacement or added paragraph(s) in clean form, that is, without markings to indicate the changes that have been made; and

(iii) Another version of any replacement paragraph(s), on one or more pages separate from the amendment, marked up to show all the changes relative to the previous version of the paragraph(s). The changes may be shown by brackets (for deleted matter) or underlining (for added matter), or by any equivalent marking system. A marked up version does not have to be supplied for an added paragraph or a deleted paragraph as it is sufficient to state that a particular paragraph has been added, or deleted.

(2) Amendment by replacement section. If the sections of the specification contain section headings as provided in 37 CFR § 1.77(b), 1.154(b), or § 1.163(c), amendments to the specification, other than the claims, may be made by submitting:

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- (i) A reference to the section heading along with an instruction to delete that section of the specification and to replace such deleted section with a replacement section;
- (ii) A replacement section in clean form, that is, without markings to indicate the changes that have been made; and
- (iii) Another version of the replacement section, on one or more pages separate from the amendment, marked up to show all changes relative to the previous version of the section. The changes may be shown by brackets (for deleted matter) or underlining (for added matter), or by any equivalent marking system.

(3) Amendment by substitute specification. The specification, other than the claims, may also be amended by submitting:

- (i) An instruction to replace the specification;
- (ii) A substitute specification in compliance with § 1.125(b); and
- (iii) Another version of the substitute specification, separate from the substitute specification, marked up to show all changes relative to the previous version of the specification. The changes may be shown by brackets (for deleted matter), or underlining (for added matter), or by any equivalent marking system. An example of an amendment to the specification could appear as follows:

On page 16, line 12, change "effect" to --affect--.

On page 23, line 4, insert --bucket-- after "backhoe".

(Note: the inserted language is placed between double dashes.)

If a new specification is submitted, a marked up copy of the original specification is also required.

## II. Amendments to the Drawings

Any amendment to the drawings modifying, deleting or inserting figures must be specifically requested in the amendment. Any changes must be shown in red-ink on the drawings. Any insertion of new figures must be set forth in the amendment and the specification must be amended in the Brief Description of the Drawings as well as in the Detailed Description of the Drawings sections in a manner as set forth above.

## III. Amendments to the Claims

All amendments to a claim must be presented in the form of a rewritten claim. Any rewriting of a claim will be construed as a direction to cancel the previous version of the claim. See *In re Byers*, 230 F.2d 451, 455, 109 USPQ 53, 55 (CCPA 1956)(amendment of a claim by inclusion of an additional limitation had exactly the same effect as if the claim as originally presented had been canceled and replaced by a new claim including that limitation). Any rewritten or newly added claim must be submitted in clean form, that is, with no markings to indicate the changes that have been made, and must be accompanied by a marked up version separate from the amendment using applicant's choice of marking system to indicate the changes being made. A parenthetical expression



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should follow the claim number indicating the status of the claim as amended or newly added, e.g., "amended," "twice amended," or "new," in both the clean version and the marked up version. A marked up version does not have to be supplied for any added claims or any canceled claims. If a marked up version is supplied to show changes made to amended claims, however, applicant should identify (in the marked up version) any added or canceled claims with a statement, such as, "Claim 6 has been canceled." A canceled claim can be reinstated only by a subsequent amendment presenting the claim as a new claim with a new claim number.

Applicants may submit a clean version (with no markings) of all of the pending claims in one amendment paper. Applicants may wish to consolidate all previous versions of pending claims from a series of separate amendment papers into a single clean version in a single amendment paper. Providing this consolidation of claims in the file will be beneficial to both the Office and the applicant for patent printing purposes. When rewriting a claim in the clean set, the parenthetical expression, if any, from the claim to be rewritten should not appear in the clean set. Thus, the only time a parenthetical expression should appear in the clean set is when a claim is being amended. See MPEP § 714.13 for submitting a clean set of claims under 37 CFR 1.116 and MPEP § 714.16 for submitting a clean set under 37 CFR 1.312. See also MPEP § 714.22(a). It is recommended that the following format be used by applicants in complying with the revised amendment practice requirements. The amendment paper should include, in the following order:

- (A) a clean version of the amended (replacement) paragraph(s)/claim(s);
- (B) a remarks section (beginning on a separate sheet); and
- (C) a marked-up version (also beginning on a separate sheet) showing changes and clearly identified as "Version with markings to show changes made."

The submission of a clean version of all pending claims shall be construed as directing the cancellation of all previous versions of any pending claims. A marked up version would only be needed for claims being changed by the current amendment (see 37 CFR 1.121(c)(1)(ii)). Any claim not accompanied by a marked up version will constitute an assertion that it has not been modified relative to the immediate prior version. Thus, if applicant is not making any amendments to the claims, but is merely presenting all pending claims in clean form, without any underlining and bracketing, a marked up version should not be submitted.

As an example, if a claim for a chair were originally written as follows:

1. A chair comprising a horizontal seat, a vertical back, and a plurality of vertical support members.

An amended marked-up version of this claim might then be written as follows:

1. (Amended) A chair comprising a horizontal seat, a

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vertical back, and [a plurality of] four vertical [support members] legs attached to said seat.

In this example, the words "a plurality of" and "support members" have been deleted from the claim. The words --four-- and --legs attached to said seat-- have been inserted.

If the specification or drawings originally described the inclusion of four legs on the chair, the new limitation of "four legs" in the claim would not constitute new matter.

#### IV. Arguments

If an Office Action contains a rejection or objection to the claims, the Applicant MUST respond with arguments under the heading "Remarks", pointing out disagreements with the Examiner's contentions. The Applicant must also discuss the references applied against the claims, explaining how the claims avoid the references or patentably distinguish from them. The applicant must respond to every ground of rejection and objection set forth in the Office Action. For more details of the amendment process, the Applicant can refer to 37 Code of Federal Regulations Sections 1.118 - 1.121.

#### V. New Matter

As previously mentioned, no amendment to the specification, claims, or drawings may introduce new matter. "New matter" constitutes any material which meets the following criteria:

- a) It is added to the disclosure (either the specification, the claims, or the drawings) after the filing date of the application, and
- b) It contains new information which is neither included nor implied in the original version of the disclosure. This includes the addition of physical properties, new uses, etc.

#### VI. Period for Response

The three month shortened statutory period specified in the cover letter (form PTO-326) is the period of time in which the Applicant has to respond to every rejection and objection within this Office Action. The Applicant's response must be received within three months of the date listed on the cover letter, or the application will be held abandoned.

This period, however, may be extended up to a maximum of six months, with the payment of the appropriate fee. The following table lists the required fee for extensions of the three month period:

<u>No. Months after Office Action Date</u>	<u>Amount of Fee</u>
0 - 1	-
1 - 2	-
2 - 3	-
3 - 4	\$ 55
4 - 5	\$200
5 - 6	\$460

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If the response is filed four months and one day after the mailing date of the Office Action, the response must be accompanied by a fee in the amount of \$200. A separate Petition for Extension of Time requesting "an extension of the period for response under 37 CFR 1.136(a)" must be submitted with the response.

**VII. Certificate of Mailing**

To ensure that the Applicant's response is considered timely filed, it is advisable to include a "Certificate of Mailing" on at least one page of the response. This "Certificate" should consist of the following statement:

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: "Commissioner of Patents and Trademarks, P. O. Box 1450, Alexandria, VA 22313-1450" on (date).

(signature)

This "Certificate" may appear anywhere on the page, and may be handwritten or typed. It MUST be signed by the person who actually deposits the paper with the Postal Service, and the date MUST be the actual date on which it is mailed.

For the purpose of calculating extensions of time, the date shown on the certificate will be used as the date on which the paper was received by the Office, regardless of the date the Postal Service actually delivers the response. In this way, postal delays would not affect the extension-of-time fee.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Urszula M. Cegielnik whose telephone number is 703-306-5806. The examiner can normally be reached on Monday through Friday, from 5:30AM - 2:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derris H. Banks can be reached on 703-308-1745. **The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306 for both regular and After Final communications.**

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Any inquiry of a general nature or relating to the status of this application  
or proceeding should be directed to Customer Service at 703-306-5648.

Urszula M. Cegielnik  
Assistant Examiner  
Art Unit 3712

A handwritten signature in black ink, appearing to read 'D. H. Banks', with a long horizontal line extending to the right.

DERRIS H. BANKS  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3700

An examination of this application reveals that applicant is acting *pro se*, that is, not using an attorney or agent in the prosecution of this application. Since a patent is a legal document, applicant should consider using the services of a registered patent attorney or agent; lack of skill in this field usually acts as a liability in affording the maximum protection for the invention disclosed.

The following pages contain information about the patent process and Patent Office that applicant may find helpful.

\* \* \* \* \*

When one believes he (or she) has invented a useful product, or method useful in industry, the inventor may apply for a patent. The patent gives the inventor the exclusive right, for 20 years from the filing date, to make, import, and sell his invention in the United States. The patent rights may be sold or leased to others. There are two types of patents: a *utility* patent is for inventions which consist of new combinations of parts or structures which function in a way not previously known, to define a new and useful product. A *design* patent is for a new ornamentation or shape of an existing product, without regard to its mechanical functioning, which may make the existing product more convenient to use, or provide a more pleasing appearance to encourage consumers to buy it. Most patents issued are utility patents.

The application for a utility patent includes a number of formal requirements, mainly (a) a written description and drawings, termed the *specification*, to describe the invention (design patents require only drawings, with no written description necessary), (b) a signed declaration that the inventor believes that the invention has not been made by anyone else before, and (c ) an application fee.

The *specification* is a report, typically about 5-30 typewritten pages with drawings if appropriate, explaining the problem the inventor is trying to solve, prior inventions that are similar to the new invention, how the new invention is an advancement over prior technology, and showing the invention and its manufacture and assembly in sufficient clarity and detail that would allow an engineer or manufacturer of

that class of products to build and use the invention without undue experimentation or further inquiry. If the patent is granted, the specification is published and makes up most of the text of the patent.

At the end of the specification are *claims* which set forth exactly what features the inventor considers necessary to define a complete operable product, and to distinguish his invention from the prior products. If granted, the inventor has the right to exclude others from making products which include all the features named in the claims; if others *infringe* on the claims, the inventor has legal remedy. However, others may make products *similar* to the invention, or even products described in the specification text as Anew@ or Ainventive@, as long as their competing product omits one or more requirements of the *claims*.

When the inventor has prepared an application which includes the necessary formal requirements and sends it to the Patent Office, the Office is required to (a) issue the patent, or (b) explain why the claimed invention is not patentable in accordance with the patent laws. The application is channeled through various offices as this determination is being made.

Initially, the papers are accepted in the mail room and assigned a *filing date*. The application then goes through various data entry and classification stages, and clerks assure that all necessary papers are present. If some requirement is missing, the applicant will be notified to send the additional information. If the application is complete, it is then delivered to an Examiner.

The Examiner staff (for utility patents) consists of about 4,000 Examiners. Each has at least a 4 year engineering degree, and some have advanced degrees and legal training. The Examiners are divided into three main divisions: those who review mainly electrical and electronic inventions, those who review chemical inventions, and those who review mainly mechanical inventions. Within each division, the Examiners are divided into teams of about 10 Examiners, or *Art Units*, which review specific kinds of inventions, for example automotive, airplanes, air conditioning, construction, etc.

When the complete application is delivered to the appropriate Art Unit it is assigned to an Examiner familiar with the type of invention disclosed. The Examiner

then reads through the specification and claims. To determine whether the application should be issued as a patent, or if the applicant should be sent a rejection notice, the Examiner mainly asks three questions:

(1) Is the invention disclosed in sufficient detail and clarity to enable one to build an operable and useful product, or is difficult for one to understand how to make the product and use it?

(2) Has another inventor already made, or *anticipated*, the product (as defined in the claims)?

(3) If another has not made the invention *exactly* as defined in the claims, is the invention so similar to the prior technology (or *Art*) that an ordinary engineer or manufacturer would have found it *obvious* to modify the prior technology to arrive at the claimed invention?

A body of laws and court decisions has been developed over the years to define the amount of disclosure necessary, and to determine when prior technology anticipates or renders inventions obvious.

If the invention is clearly disclosed, the Examiner will then need to do research to see if anyone has disclosed the claimed invention in the past. It is not necessary that the invention has been *patented* by anyone else, but only that it is disclosed or on display or for sale or in use somewhere. Most of the research for mechanical inventions involves looking through old patents. Examiners may also consider information in sources such as textbooks, newspapers, advertisements, magazines, and even cite common knowledge or experience. As the Examiner does research, he (or she) will look for inventions similar to applicant=s, and additionally look for references which may suggest obvious modifications to prior technology which would result in applicant=s invention.

We have about 6,000,000 U.S. Patents on file, as well as millions of foreign patents and other literature. To facilitate research, the information is classified and organized according to technology, much as the books in a library are organized. The information is classified into about 400 broad *classes*, which define the general technology area, with each class containing typically 50-500 *subclasses* which define

specific technical features or characteristics of the inventions. Each subclass typically contains 50-500 patents and other literature.

After the Examiner has read applicant=s application, the Examiner will determine which classes and subclasses would be most likely to contain inventions similar to that which applicant is claiming, and will look through those, and will remove relevant documents as he searches. At the conclusion of the research, he will then review the invention as defined in the claims, and compare it with the information he found. He will then write a letter to the applicant either granting the patent and explaining why the applicant=s invention is patentable over the prior technology, or denying the patent and explaining how the information found anticipates or renders obvious the claims. Then the applicant can either (1) agree that the invention is not patentable and *abandon* the application, (2) argue that the Examiner has made an error and that the cited information does not anticipate or render obvious the invention, or (3) add additional features to the claims to avoid the prior technology. If the applicant is not satisfied with the Examiner=s opinion, the applicant may appeal to a special three-examiner Appeals Board, and the Federal courts.

Keep in mind though that the grant of a patent is not a statement by the Government that applicant=s invention is a *Agood@* idea, or will be desired by consumers; the grant of a patent only indicates that applicant has disclosed and claimed something of some minimal utility which is not shown or rendered obvious by prior technology. Marketing this idea and making money is applicant=s responsibility. Some inventions end up in widespread use and make millions of dollars, and others don=t even recover the cost of obtaining the patent.

\* \* \* \* \*

When writing a claim, the inventor needs to ask whether his invention is either anticipated by any one document, or rendered obvious by one or more documents. However, the answer to this question depends on the amount of detail he is willing to



put in the claims: A very *broad* claim, which includes little detail, will give the invention greater protection and it will be harder for a competitor to design a product which avoids infringing the claims; however, it is more likely that such claim will be rejected over the prior references. On the other hand, with a *narrow* claim, which includes much detail, it is easier to define over the prior references; however, a competitor may be able to design a similar product by just avoiding one little detail. So what the inventor needs to ask is: Als it possible to write a claim which includes enough detail to overcome the prior references, but not so much that a competitor will be able to make a product very similar to mine by changing one little feature?@ If the answer to this is No, the inventor shouldn=t apply for a patent. If the answer is Yes, then the inventor needs to ask the next question: Als my invention really an advance in the technology that will be valued by consumers, or are people perfectly happy with existing technology and probably won=t be willing to try my product?@. If the inventor feels that a sufficiently broad claim can be written that defines a desirable product, then it may be worth applying for a patent.

For example, assume that an automobile is known in the prior art, but an automobile with an AM-FM radio is a novel patentable invention.

An example of a claim which is too broad would be: AAn automobile with an electrically-operated accessory@. This claim would be rejected under 35 USC 102 because it is known that automobiles conventionally include electrical accessories such as lights and horn; this does not distinctly claim the novel radio idea.

An example of a claim which is too narrow would be: AAn automobile with an AM-FM radio and a 6-cylinder engine@. In this case applicant would indeed receive a valid patent and would be able to exclude others from selling automobiles with an AM-FM radio and 6-cylinder engine. However, it would be easy for a competing manufacturer to design around this claim by selling automobiles with an AM-FM radio and an 8-cylinder engine. Their competing 8-cylinder automobile would still embody applicant=s novel idea and would likely cut into applicant=s sales.

The Aperfect@ claim would be: AAn automobile with an AM-FM radio.@ In this case, a competing manufacturer=s product would have to exclude the novel AM-FM

radio, so would not likely cut into applicant=s business.

However, the grant of this Aperfect@ claim still does not guarantee that applicant=s product will sell well. If consumers are perfectly happy with the prior technology and perceive no benefit from applicant=s improvement, they may not be willing to pay more for applicant=s product. A patent, to be successful, must often be combined with a marketing and advertising campaign to make people aware of applicant=s new product and demonstrate why the new product is better than old products and why consumers should choose the new product. Although applicant may see his idea as a significant improvement, there is no guarantee that consumers will see it this way.

Also keep in mind that if applicant=s invention is for an improvement on an existing product, and there is a currently valid patent on that product, it may not be possible for applicant to manufacture his new product without infringing the existing patent.

For example, if Ford owns a valid patent for AAn automobile with an engine and four tires@, and applicant has invented a novel AAutomobile with an engine, four tires, and AM-FM radio@, Applicant may very well obtain a valid patent on such automobile with radio. However, if applicant tries to sell such an automobile with radio, Ford may demand payment of royalties, or even shut down applicant=s business altogether, because this will infringe their basic automobile patent; applicant=s patent will not have full value until Ford=s patent expires, which could be years from now.

\* \* \* \* \*

Claims are written as a single sentence which is the object of a sentence starting with "I (or We) claim". To see how this works look at the following three claims:

I claim:

1. A vehicle having a front and a rear with a seat facing the front and four wheels including a front pair of wheels, and a back pair of wheels.
2. A vehicle having a front and a rear with a seat facing the front

and four wheels including a front pair of wheels, and a back pair of wheels, and further including an engine supported primarily above said rear wheels.

3. A vehicle having a front and a rear with a seat facing the front and four wheels including a front pair of wheels and a back pair of wheels, said vehicle further including an engine supported primarily by said rear wheels, and a power train extending from said engine to said front wheels whereby said rearwardly supported engine can provide motive power to said front wheels.

These are *independent* claims and are of progressively narrower scope. An *independent* claim sets forth a complete invention without referring to any other claim. Every patent application must include at least one independent claim.

It is often desired to further define an invention set forth in a previous claim. This may be done with *dependent* claims. A dependent claim refers back to another claim, either independent or dependent, and includes all features of this previous claim, and adds additional features. For example, Claims 2 and 3 could have been written in dependent form as follows:

2. A vehicle as in claim 1 and further including an engine supported primarily above said rear wheels.

3. A vehicle as in claim 2 and further including a power train extending from said engine to said front wheels whereby said rearwardly supported engine can provide motive power to said front wheels.

Claim 2 covers all the features of the vehicle of Claim 1, *plus* the rear engine. Claim 3 covers all the features of the vehicle of claim 1, *plus* the rear engine of claim 2, *plus* the power train.

Claim 1 if granted would permit the patent holder to exclude others in the United States from making cars, trucks, and even wagons having a seat and four wheels.

Both claims 1 and 2 are not patentable under 35 USC 102 because the VW Bug,

which has both four wheels and an engine in the rear, was known and used in this country more than one year prior to today's date in this hypothetical example.

If we assume that the VW Bug and a 1974 Cadillac having a front supported engine and rear wheel drive comprise all of the prior art, then insofar as a rejection of claim 3 is concerned, 35 USC 102 does not apply, but 35 USC 103 may apply.

To determine the patentability of claim 3 one must answer the question: Given a front engine car with rear wheel drive and a rear engine car with rear wheel drive, would it have been obvious to provide a rear engine car with front wheel drive?

The answer to this question is not always clear. One must consider the skill of a person having ordinary competence in the car building industry. What factors would cause one of ordinary skill to make this combination, and what new and unobvious benefits are to be derived from this unique combination of features?

Claim 3 if granted would give the inventor the right to exclude others from making or using rear engine cars with front wheel drive, and rear engine cars with four wheel drive.

The applicant, as a general rule, does not wish to burden his claims with frivolous or unnecessary limitations. Claim 3 is valuable only if someone wants to make a rear engine car with front wheel drive and is willing to pay the patent holder money for the privilege of making such a car.

One would not, for example, wish to put in his claim the limitation that the wheels are made of chrome plated steel, because car manufacturers would be able to make the inventor's car with painted steel wheels without infringing the claim, and the chances are they would do just that to avoid paying the patent holder royalties.

People not familiar with claim writing should look at the claims of patents which were cited by the examiner and try to get some feel for writing single sentence claims.

In writing a claim always think in generic terminology. For example, use terms like "fastening means" not "nail or screw" whenever possible. If an inventor's claim calls for a screw holding two parts together, a competing manufacturer can make the

claimed device using a nail to hold the parts together without infringing the claim and without paying the inventor or patent owner royalties. Also, since the claim must define something different and unobvious over the prior art, claiming something like a specific fastening means will usually not help overcome an obviousness rejection because it is obvious to substitute a screw for a nail.

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